



NURSING INTERVENTIONS FOR ADO- LESCENTS SUFFERING FROM OBESITY

A Literature Review

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<p>Abstract: The responsibility of a nurse does not only involve care for the depended patient, but also patients or clients who need care and assistance in reaching healthy lifestyle and wellbeing. Therefore, this thesis relates to the healthy lifestyle promotion for obese adolescents. The prevalence of obesity in adolescents is steadily increasing around the world. The prevalence of obesity has increased three-fold among Finnish adolescents during the past three decades. Being obese during adolescence predisposes individuals to obesity in adulthood. Also, obesity is linked to Cardiovascular diseases and Diabetes mellitus.</p> <p>The purpose of this study is to review literature examining the nurse's role as a health promoter and interventions for adolescence suffering from obesity. Furthermore, to investigate the application of the Transtheoretical behaviour model as intervention method for obese youth. The Transtheoretical model might act as a promising model of behavior change. It can bring improvements in dietary and physical activity behaviors when combined with other forms of interventions.</p> <p>A literature review was conducted using over 11 scientific articles and analyzed qualitatively using an inductive approach. A scientific literature search was conducted from 2005 through 2015 to locate studies targeting interventions for obesity in adolescents. These searches were conducted in the Cochrane Library, EBSCO, Google Scholar, Sciencedirect and PubMed electronic databases.</p> <p>Findings show that nearly all of the interventions provided information regarding advocacy and counselling healthy eating, physical education and assistance in behavior modification. A literature review revealed that school nurses are in exceptional position to contribute to growing obesity numbers. There was a deficient obesity-related nutritional knowledge among nurses. Nurses should use special approaches such as motivational interviewing in order to assess clients` readiness to change, provide weight loss counseling and encourage them to become more physically active. Stages of change model was practiced with physical and dietary modification as means of intervention showing positive outcomes.</p> <p>This thesis was commissioned by Kallio homecare department in Helsinki, Finland.</p>	
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Foreword

We are at our very best, and we are happiest, when we are fully engaged in work we enjoy on the journey toward the goal we've established for ourselves. It gives meaning to our time off and comfort to our sleep. It makes everything else in life so wonderful, so worthwhile.

Earl Nightingale

I would like to thank God for giving me an opportunity to pursue my dream career-nursing at Arcada University of Applied Sciences, where I was supervised and guided by the most talented, professional and generous teachers: Gun-Britt Lejonqvist, Denise Villikka, Pamela Gray, Jari Savolainen, Annika Skogster, Camilla Lindroos, Pernilla Stenbäck, Birgitta Dahl, Ilse Tillman and Anna Holmström. My gratitude and respect to them is beyond any words.

Finally and most importantly, I would like to thank my dearest mother whose support, love, encouragement and wisdom guided me throughout this extensive journey of study and enabled me to reach my goals.

1. Introduction

Recent definitions of nursing have tended to stress nurses' interest in health promotion. Rozella Schlotfeldt stated as follows: "The goal of nursing as a field of professional endeavor is to help people attain, retain and regain health" (Schlotfeldt, 1972). Another nursing educator in 1976 agrees that nursing care should be provided to individuals, families or communities around circumstances that arise from health related problems (Chater, 1976). Hence, author is interested in investigating the nurse's role as a health promoter for adolescents who suffer from obesity. The reason to this personal involvement and choosing this specific age group is because, adolescence is an important period, where establishment of character, social identity, and independence occurs. Thus, it is a right time to provide possibilities for lifelong healthy lifestyles that will affect both psychosocial and physical well-being in the adulthood (Pbert et al., 2014). On the other hand, adolescents obesity related issues and interventions have been underestimated and understudied (Whitlock, 2008) - which evokes the writer's interests in investigating this area. In addition, ethical considerations are crucial and significant in nursing interventions for this particular health problem. Therefore, author will also discuss major ethical pitfalls arising in this study.

Despite multitudinal and diverse health care precautions and intervention measures the numbers of obese individuals has been raising epidemically during the past decades. Researchers argue about different causes such as genetics, environment, sedentary behavior and unhealthy nutrition that affect crucially in the epic prevalence of obesity. Nowadays, prevalence of adolescent obesity is not only seen in the industrialized nations, but also statistics have rapidly grown in most of the developing countries (Sinha & Kling 2009). Estimated obesity prevalence figures show higher trends in the western and southern Europe, than northern part (Lobstein & Frelut 2003). Being obese or overweight in adolescence highly predicts the obesity in adulthood and closely related to obtaining cardiovascular diseases (CVDs), Diabetes mellitus and renal failure (Olshansky, 2005; Ferraro et al., 2003; Wei, 2003). Hence, in order to prevent and treat the obese population of youth from such devastating complications, a literature review using inductive approach was conducted by the author to determine the nurses' role as a health promoter and uncover intervention practices. In addition, to investigate an impact of Transtheoretical model on assisting obese individuals towards healthy lifestyle.

This study is commissioned in Kallion Kotihoito lähipalvelualue 6, Helsingin kaupunki. The current research deals with the health concerns mainly in public health sector. The results found in this study may be useful in adding new techniques in existent nursing interventions against adolescence obesity.

2. Background Information

According to research, obesity is becoming epidemic and steadily increasing worldwide becoming a global health problem demanding high financial support and being a burden for the individual, society and the whole health care system (WHO, 2006). In the past, obesity was considered a problem of high-income countries, such as European countries and States of America, however, this problem is now affecting the low-and middle-income countries estimating more than 30 per cent higher in middle-income countries than that of developed countries (WHO, 2015). There are several major factors causing obesity: genetic, lack of physical activity and nutrition. The research conducted by doctor Llewellyn strongly supports the fact of childhood obesity having a partial (50 per cent) correlation to the genetic factors (Llewellyn et al., 2013). Next cause is a lack of physical activity, which is a very significant contributor to obesity. It is a well-known fact that by emergence of technology the sedentary behavior of adolescents has been increasing (Hernandez et al., 1999 & Proctor et al., 2003). Examination of causes of obesity contributes in planning a more individualized and specific intervention by nurses.

The prevalence is found to be occurring in more than 10 per cent of school-aged children (5-17 years) around the world (Lobstein et al., 2004). For instance, in Finland according to the representatives of Health Behavior in School-aged Children Study adolescence obesity (based on self-reported weight and height) doubled among 13 and 15-year-old Finnish adolescents between 1984 and 2002 increasing further into 2006 (Välimäki 2004 & Ojala et al., 2006). It has been reported that the average weight of Finnish adolescents increased by 4,4 kgs from 1993 to 2004, while the mean height increased by 0,6 cm (Santtila et al. 2006). Despite numerous health promotion programs to increase awareness and modify unhealthy lifestyle features the rate of obesity in adolescents continues to rise (Ogden et al., 2006).

Health care providers particularly in the primary care and school settings are very important in managing the obesity or overweight problems. They play a significant role in promoting the first health interventions by meeting many children and young adults and having regular long-term treatment contacts (Laws & Counterweight Project Team, 2004). Typ-

ically, in the past decade the research has been operated in regard to physicians (Al-Ghawi, 2009 & Smith et al., 2011). However, there is a lack of information about nurses' obesity related clinical performances and intervention methods. A literature review conducted by Budd concluded that only 6 of 15 obesity -based researches focused on nurses (Budd et al., 2011). Therefore, investigation and development of nurses' intervention methods should be prioritized nowadays. However, before describing the nursing role and interventions in details, author will first draw your attention to the definition of obesity in adolescents.

2.1 Obesity in adolescence

According to the WHO, obesity is defined as abnormal or excessive fat accumulation that may debilitate health. Essentially, obesity refers to people with a Body Mass Indexes greater or equal to 30 kg/m^2 (WHO, 2012). However, obesity determination can be challenging in adolescents due to using only weight to classify the overweight status. According to the American Heart Association (AHA) obesity should be identified as a status of overweight if it is associated with adverse physical or psychological health issues (Williams et al., 2002). On the contrary, American Medical Association defined obesity as a disease and claimed this determination will lead to a more focused research on prevention and intervention methods (AMA, June 2013). Adolescence is defined as a period of critical development in biologic, social and psychological systems (Meininger et al., 1998). It is a transitional stage when traits of adult health behavior are established. Therefore, it is an opportune in which to intervene (Langer & Warheit, 1992).

Adolescent obesity defined as body mass index greater than or equal to the 85th and 95th percentile for age and sex, respectively, have increased dramatically during the past several decades (Gellar et al., 2012). In the USA, 34 per cent of adolescents and young adults aged 12-19 years are obese or overweight (Ogden, 2008). In Europe, the prevalence of adolescent obesity is also very high. According to the weight studies established by WHO, 19.3-49.0 per cent of boys and 18.4-42.5 per cent of girls were overweight (WHO, 2007). In Finland, the data on changes in the prevalence of adolescence overweight or obesity is

scarce. However, according to the researched provided by Kautiainen, the prevalence of overweight and obesity increased three-fold among Finnish adolescents during the past three decades. Kautiainen and her colleagues by using IOTF definitions outlined sharp rises in the prevalence of obesity in Finnish adolescents aged 12-18 years old from 1977 to 1999 year. Statistically, the prevalence of obesity increased in boys from 1.1 to 2.7 per cent and in girls from 0.4 to 1.4 per cent (Kautiainen et al. 2009).

The rising numbers suggest a critical need to address overweight in this population. Positively, obesity, as well as other related illnesses is mainly preventable. Thus, the prevention of adolescent obesity needs an immense priority in the health care system. All around the world, the health care personnel and researchers are establishing goals for treating the obesity (Cochrane reviews, 2011), because one of the greatest concerns about obese children is a likelihood of this trait to stay into adulthood and an obvious outcome development of chronic diseases, like diabetes or CVDs. Moreover, the risks of depressive symptoms associated with obesity in adolescents increases, making this issue much more troublesome (Wade et al., 2002). Additionally, obesity carries a social stigma that adversely affects children's psychosocial life (WHO, 2015). Thus, nurses should care the obesity by maintaining adolescents' dignity and self-esteem. In the following chapter, reader's attention will be focused on the importance of nursing intervention for obese young adults.

2.2 Nursing care of adolescence obesity

The responsibility of a nurse does not only involve care for the depended patient, but also to patients or clients who need care and assistance in reaching healthy lifestyle and wellbeing. This care is given by means of supportive-educative method which are key roles for the nurse. For example, such methods include advocacy and counseling. According to Kozier "Counselling is the process of helping a patient to recognize and cope with stressful psychological or social problems, to develop improved interpersonal relationships and to promote personal growth. It involves providing emotional, intellectual and psychological support to patients" (Kozier, 2010). When care involves adolescents, practitioners need to

have a clear understanding of their normal psychological or physical development. Nurses should also be aware of inappropriate or abnormal health conditions, for instance, obesity.

Nurses according to The Code: standards for conduct, performance and ethics for nurses, should make the care of people their first concern, treating them as individuals and respecting their dignity. To protect and promote the health and well-being (The Code:NMC, 2008). When it comes to health promotion, Kozier states the following as nurses' role in health promotion: Educating patients on ways enhancing fitness, improving nutrition, managing stress. Also, reinforcing good health behaviors and acting as advocate for community changes that promote a healthier environment (Kozier, 2010).

So, once a reader focused on above mentioned factors, the author's motives of choosing this particular research topic should be obvious. Providing interventions for obese adolescents is important role of a nurse in providing healthy lifestyle. Nurses meet many people suffering from obesity and could thus play a key role in its interventions through screening, counselling and supporting people to lose weight (Counterweight Project Team, 2008). A Swedish researcher defines obesity-related clinical activities, as assessment for obesity and overweight (e.g BMI assessment, waist circumference), counseling and supporting persons with obesity or overweight to lose weight (advice about physical activity and weight reducing diets), and use of approaches such as motivational interviewing (Engström et al., 2013) . Even though, nurses have implemented the interventions for obesity management, there is still an urge to study and deepen the knowledge about what precisely is done by nurses in clinical practice and what are the most reliable methods in preventing and treating this arising problem of obesity (Sargent et al., 2012). The detailed information on nursing interventions is elaborated in the "Findings" chapter of this study.

3. Theoretical Framework

Nurses have the unique position in healthcare promotion. They are the ones who may influence people's lifestyle choices. These lifestyle choices may be changed by nurses using one of the health promotion approaches which is behavioral change approach (Kozier, 2010). Kozier states: "The aim of the behavioral change approach is to encourage change in an individual's behavior by changing their understanding of health and lifestyle choices. This approach uses communication, education, persuasion and motivational techniques to encourage the individuals to change their lifestyle behaviours" (Kozier, 2010). Therefore, author believes that Transtheoretical model could be an excellent framework within nursing interventions for obesity. Losing weight requires a change in behavior, such as eating and physical behavior.

Generally, using theoretical framework in nursing research plays an important role in leading the integral process of the study. It provides a substantial organization and a particular perspective in interpreting the results of the research. The theoretical framework used for this thesis is the Transtheoretical Model or it is also called Stages of Change behavior. The reason why this model was chosen is because in order to promote healthy lifestyles for the obese adolescents the great attention should be drawn into changing their behavior. Clinical interventions for chronic diseases such as obesity involves lifestyle changes as a fundamental factor for the treatment (Frenn et al., 2004).

For instance, some research are aiming on finding the most effective intervention methods that can result in lifestyle changes (Perry & Butterworth, 2011). According to Karatay, such methods are defined as : "any combination of strategies and information intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and derived from an individual assessment- are one such method" (Karatay et al., 2010). The theoretical concepts derived from the Transtheoretical model (TTM) such as stages of change, self-efficacy are used as a strategy for determining the direction of assessment and interventions (Wilson et al., 2008). Therefore, the TTM stages of change is most frequently used in the interventions aiming at making lifestyle modifications (Wilson et al., 2008). Thus, nurses can use the current model, as a baseline for any interventions that will lead to a positive outcome and a healthy lifestyle.

3.1 Transtheoretical Behavior Model

Initially, the Transtheoretical model was conceptualized by Doctor James Prochaska and his colleagues at the University of Rhode Island in the beginning of 1980s (Prochaska & DiClemente, 1983). The TTM elucidates the consecutive change in behavior in people from unhealthy behavior to a healthy one. During the adaptation process of the new acquired behavior this model predicts the possible outcomes of intentional change (Mastellos et al., 2014). Prochaska's model provides a conceptual explanation of the processes that individuals go through when modifying a problem behavior or acquiring a positive behavior, in the case of obesity - changing dietary intake, or physical activity in order to achieve a sustainable weight loss (Mastellos et al., 2014).

Mastellos believes that majority of people are not ready to change their behavior and will therefore not be helped by traditional action-oriented prevention programs (Mastellos et al., 2014). However, the behavior change is a complex thing and may require the sequential stages. According to the master of the TTM the individuals typically adapt to different processes of change relatively to the progresses they have made towards changing their behavior (DiClemente, 1985). In order to implement the interventions based on TTM the individual's stage of change regarding the willingness to accept the lifestyle modifications should be assessed (Mastellos et al., 2014). Because the person's cognitive and perceptive levels differ from each stage, the processes of change, decisional balance and self-efficacy concepts have to be arranged appropriately in order to achieve the behavior transition (Chouinard, 2005).

3.2 Stages of Change

The Stages of Change (SOC) is the major constitute of Transtheoretical model and represents the sequences of stages through which individuals pass making a progress in achieving a particular lifestyle transformation (Velicer, 1998). Basically, SOC describes five stages an affected individual may be in and the health care givers' as well as individual's readiness to promote this healthy lifestyle change. The model is a tool that permits clients to make choices based on weighing the pros and cons involved in making a change (Prochaska

et al., 1994). It is imperative for healthcare providers to understand and identify the stage an individual is in before a successful healthy behavioral change can occur.

The process during which individual adopts positive behavior is described in five stages: pre-contemplation, contemplation, preparation, action and maintenance (Prochaska & Di-Clemente, 1983). These stages are represented in details in the following table (Table 1) and diagram 1.

Table 1. Description of five stages of change model.

Stages	Definition	Techniques
1. Pre-contemplation	Individuals are not ready to change and no intention or consideration of changing is noticed	Nurses have to verify the lack of readiness, the risk factors of health problem should be explained and individuals should be encouraged to evaluate their behaviour
2. Contemplation	Individuals are hesitant to change	Nurses should explain the advantages and disadvantages of behavior change. Nurses should promote positive outcomes and expectations from the change
3. Preparation	Individuals are trying to change or ready to change	Nurses should encourage individuals to evaluate their own behavior change. Also, nurses should advocate individuals to start with small steps towards change
4. Action	Individuals are making changes, working actively towards goals	Nurses have to support individuals` self-efficacy for dealing with obstacles and nurses have to support individuals from frustration of failure
5. Maintenance	Individuals maintain the acquired changes through active ongoing work. Individuals are less likely to relapse at this stage and have confidence and motivation to continue their change	Nurses should re-assess and follow up the process

Mastellos supports the idea of using this model in prevention and intervention of weight-loss, dietary changes and physical behavior activities (Mastellos et al., 2014). However, it is important to note that any individual may relapse into a previous stage at any time (Prochaska & DiClemente, 1983)

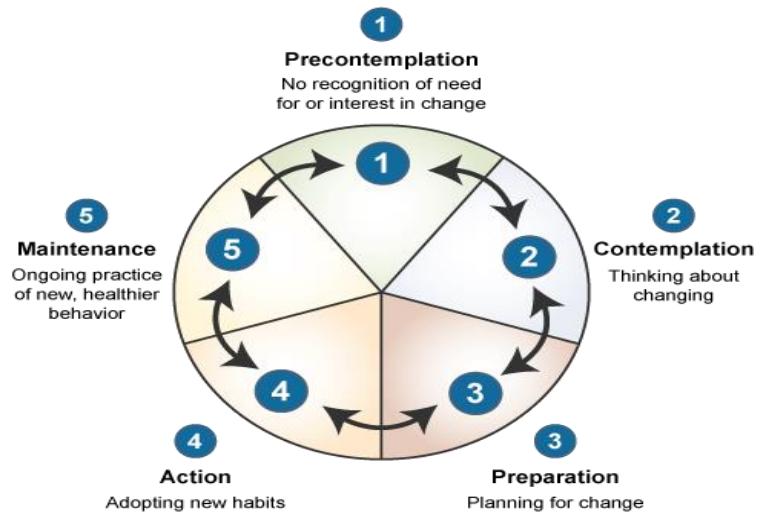


Diagram 1. The depiction of five stages of change through which behavior change occurs.

Source: <http://www.esourceresearch.org/Default.aspx?TabId=732> (accessed 2.12.2015)

The following chapter identifies the research objectives for this investigation.

4 Aim and Research questions

“Nursing research is a growing field in which individuals within the profession can contribute a variety of skills and experiences to the science of nursing care”(Tingen, 2009). The evidence obtained through nursing research used by nurses to advocate the patients or clients and provide optimal care for suffering ones. The purpose of this literature review is to identify the nurse’s role as a health promoter and interventions that are used for adolescence who are obese. Furthermore, to investigate the application of the Trans-theoretical behaviour model as intervention method for obese youth. The following research question was formulated as follows: What interventions can be used by nurses to promote a healthy lifestyle for obese adolescents?

5 Methodology

Florence Nightingale was the leading figure in the development of nursing research in 1854. Nurses were dependent upon the studies of their profession (Clark & Hockey, 1989). Nowadays, nurses are actively generating and applying research finding in practice to improve patient care. There are two main approaches to nursing research: quantitative and qualitative methods. In this current study author chose qualitative approach using inductive content analysis. According to Polit and Beck, qualitative research investigates the human experience as it is lived through careful collection and analysis of narrative materials (Polit & Beck, 2008). When inductive method is used findings are analyzed by identifying themes in order to develop a theory or a framework that explains the phenomena (Polit & Beck, 2008). According to Elo and Kyngäs, inductive type of analysis is used when there is not enough former knowledge about the phenomenon or if it is obscure and fragmented. Moreover, in inductive content analysis, obtained data is analyzed and organized categorically (see diagram 1) following the processes of open coding, creating categories and abstraction (Elo & Kyngäs, 2008). Thus, according to the purpose of this review the chosen method is entirely relevant and meaningful.

Author using Arcada's guidelines for data retrieval from the scientific database for this literature review following processes were completed: Identification of need for review, proposal preparation for systematic review, identification of research, selection of studies, assessment of study quality, data extraction and data analysis.

5.1 Data Collection

The data was collected using Arcada's thesis writing rules using the "Libguides" program in order to access to electronic databases. Thus, the review is written by synthesizing published research worldwide about obesity in adolescents. A scientific literature search was conducted from 2005 through 2015 to locate studies targeting interventions for obesity in

adolescents. These searches were conducted in the Cochrane Library, EBSCO, Google Scholar, Sciencedirect and PubMed electronic databases. Manual searching was completed in Journal of Pediatric Obesity, Journal of Obesity and WHO databases.

The databases were searched using the relevant terms. The search phrases were classified into two groups: “Obesity” AND “Nursing interventions”, or “Obesity in adolescents” AND “Nursing interventions”. The extraction of relevant scientific articles included containing keywords such as “obesity”, “adolescence”, “children”, “nursing interventions, and assessment”, “health problems”, “clinical and community based interventions”. Almost in all used academic databases the hits were refined to “peer-reviewed”, year of publication and settings of the researches.

5.1.1 Inclusion and Exclusion criteria

An evaluation for inclusion and exclusion in this review included assessing the titles and abstracts of the articles. An inclusion criteria for the data collection are: adolescents from 10 years-20 years old, multicomponent nursing intervention that included physical activity, nutrition and behavior modification, peer-reviewed, the years from 2005-2015, PhD scientific articles. An exclusion criteria: conducted in an in-patient setting, age of participants less than 10 years and greater than 20 years old, materials written in languages other than English, time range less than 2005.

All articles that appeared to meet the study criteria were included. The following two tables illustrate clearly how search methods was applied.

Table 2. Illustration of data collection using the first classified term group.

Databases	Search terms	Total number of hits	Refined hits	Relevant	Chosen articles
EBSCO	"obesity" and "Nursing interventions"	103	89	13	2
PubMed	"obesity" and "Nursing interventions"	659	403	26	8
Sciencedirect	"obesity" and "Nursing interventions"	17,282	1,521	190	10
Cochrane library	"obesity" and "Nursing interventions"	2	2	0	0
Google scholar	"obesity" and "Nursing interventions"	165000	18000	more than 50	4

As depicted in Table 2, twenty four relevant articles are chosen for further elaboration. Next table shows data collection process using phrases “obesity in adolescents” and “nursing interventions”.

Table 3. Showing the data collection using the second classified term group.

Databases	Search terms	Total number of hits	Refined hits	Relevant	Chosen articles
EBSCO	"obesity in adolescents" and "Nursing interventions"	2882	81	7	1
PubMed	"obesity in adolescents" and "Nursing interventions"	168	31	11	2
Sciencedirect	"obesity in adolescents" and "Nursing interventions"	4527	721	116	2
Cochrane library	"obesity in adolescents" and "Nursing interventions"	20	20	4	0

Google scholar	"obesity in adolescents" and "Nursing interventions"	39200	17300	more than 30	0
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From the second group, in total 5 relevant scientific articles were collected. In order to choose the articles from selected 29 articles, author read each article for a minimum of two times. Thus, the most appropriate data was extracted in this research from 11 chosen articles. Most of the data articles were derived from PubMed and EBSCO databases, using Boolean technique of data retrieval. The following table shows the summary of total chosen articles.

Table 4. Presentation of summarized scientific articles used for the current literature review.

Author/ year	Title	Journal
1. Gellar, Lauren et al /2012	Exploratory research to design a schoold nurse-delivered intervention to treat adolescent overweight and obesity	Journal of Nutrition education and Behaviour
2. Pbert, Lori et al / 2014	A school nurse-delivered intervention for overweight and obese adolescents	Journal of School Health
3. Have, ten Marieke/2014	Ethical aspects of obesity prevention	Best Practice & Research Clinical Gastroenterology
4. Calderon, Kristine/ 2005	Obesity- related cardiovascular risk factors: Intervention recommendations to decrease adolescent obesity	Journal of Pediatric Nursing
5. Budd, Geraldine/ 2015	The obesity epidemic, Part 2: Nursing assessment and intervention	
6. Park et al /2011	Assessment of nurses' nutritional knowledge regarding therapeutic diet regimens	Nurse Education Today
7. Hawley, Suzanne/ 2010	Development of an obesity prevention and management program for children and adolescents in rural setting	Journal of Community Health Nursing
8. Washington Reginald/ 2008	Overview of the expert committee`s recommendations for prevention, diagnosis and treatment of child and adolescent obesity	Progress in Pediatric Cardiology
9. Frisco, Michelle/ 2009	Adolescent weight and depressive symptoms: for whom is weight a burden?	Social science Quarterly
10. Engström,	District nurses`self-reported clinical activities,	Applied Nursing Research

Maria/ 2013	beliefs about and attitudes towards obesity management	
11. Mastellos et al/ 2014	Transtheoretical model stages of change for dietary and physical exercise modification in weight loss management for overweight and obese adults	Cochrane Database of Systematic Reviews

5.2 Data analysis

Qualitative data analysis is a complex set of intertwined processes and practices. Data analyses has been described as the interplay between raw data, the procedures used to interpret and organize the data and emerging findings (Huberman & Miles, 1998). In order to induce the most important and valid results the data was analyzed in different aspects. The data was elaborated using qualitative content analysis by defining the concepts, coding the range and nature of phenomena, finding the associations and outlining explanations and solutions.

After highlighting the necessary information in those articles the data was coded into three categories, one category containing sub-category. The general theme given to connect the categories is “Nursing interventions for obese adolescents”. A sample of how the categorization was done can be observed in the following diagram.

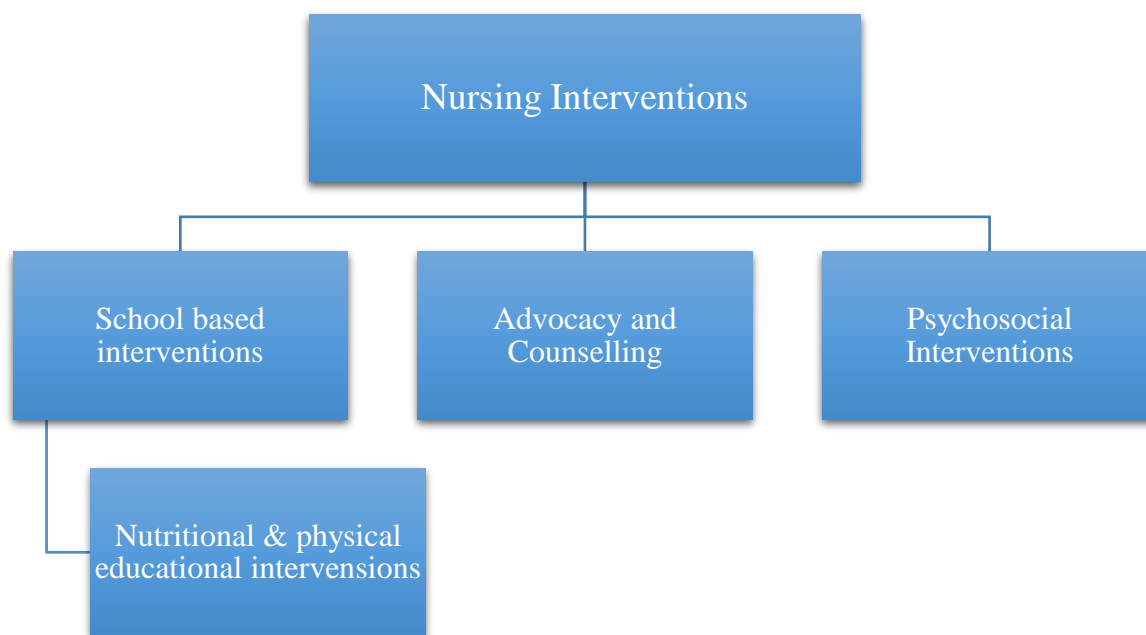


Diagram 2. Illustration of the data coding process.

5.3 Ethical considerations to scientific practice

This chapter addresses the various ethical issues in conducting nursing qualitative research. Powell agrees that: “Ethics mechanisms, including ethical codes and guidelines, and research ethics committees are means of trying to ensure that ethical standards are met and maintained in research” (Powell, 2012). According to Finnish Advisory Board on Research Integrity, there are three main ethical principles of research study: Respecting the autonomy of research subjects, avoiding harm, and privacy and data protection. These principles were read carefully and understood to comply the ethical considerations when writing a scientific study. For example, Finnish Advisory Board claims “Data protection forms the most important area of privacy protection regarding the collection and processing of research data and the publication of results”- Finnish Advisory Board on Research Integrity, 2012.

In this thesis, writer preserved the integrity and confidentiality of all the scientific articles used for this research. The data analysis and interpretation is conducted honestly by

maintaining the objectivity and avoiding the bias. When presenting the outcomes of this research to the interested side, the ethical considerations were raised in regards to nursing interventions for adolescence obesity care. Furthermore, any scientific misconduct such as fabrication, falsification of data and plagiarism is ultimately avoided. All the references were sorted according to Harvard referencing style. Hereby, author read the regulations of good scientific writing presented by Arcada (Thesis writing Guide, Arcada 2014). Overall, this literature review was conducted as a scientific method that follows research ethical guidelines, is practical and provision of useful quality data.

6 Results

This chapter reveals the findings derived from eleven different scientific articles. The aim of this study was to reveal nursing interventions for obese adolescents. The nursing interventions across the studies appeared to be diverse. Generally, nearly all of the interventions provided information regarding healthy eating, physical education, and behavior modification techniques. Such interventions are critical for decreasing the prevalence of obesity among adolescents. Also, the TTM stages of change was applied in some studies as a framework for managing with obesity. It was determined Transtheoretical model and stages of change (TTM SOC) has been linked to efficient interventional approach in behavior modification planning. Nonetheless, sustainable weight loss and long-term behavior change varied considerably (Mastellos et al., 2014). However, it is the nurses' role to assess the outcomes of those interventions and counseling the appropriate methods to adolescents and their parents (Calderone, 2005).

Basically, findings are coded into three categories: "School-based interventions" followed by a sub-category "Nutritional and Physical Educational Interventions", where school nurse assesses the needs of treatment and offers interventions, then "Advocacy and Counseling Interventions". Last category is "Psychosocial Interventions".

6.1 School-based Interventions

The investigation carried by Pbert et al., to evaluate feasibility and efficacy of school nurse delivered intervention claims that school nurses are in exceptional position to contribute to growing obesity numbers. This idea is said to be laid in cost-effective behavioral interventions, which can be delivered in readily accessible environment (Pbert et al., 2014). School nurses are believed to be responsible for a complete assessment of physical and obesogenic behavior of students. Blood pressure, fasting blood sugar, BMI and the waist circumference are the key measures in assessing the obese teenagers. Traditionally, BMI is

calculated at each adolescent's health care visit and serves as the initial screening point. When a BMI is at or above the 85th percentile, the nurse should assess medical and behavioral risks before initiating any intervention (Washington R, 2008). Yet, thorough medication history is especially important in assessing obese patients: numerous medications can contribute to weight gain and make losing weight more difficult (Budd et al., 2015). Apart from physical assessment behavioral evaluation should be performed to identify the nutrition and physical activity behaviors. Moreover, the adolescents' motivation to make short-term or long-term modifications should be assessed and specific interventions must be adapted accordingly (Washington R, 2008). On the other hand, Budd et al., claims that an individual's genetic makeup has an impact on weight control and this should be acknowledged by a nurse in the initial assessment. An individual with strong family history of obesity may feel that dieting is less likely to be successful but maybe open to making changes to improve his/her health (Budd et al., 2015).

It is important to note that in school settings the issues related to confidentiality and peer pressure were cited as a major barrier of receiving help from a school nurse (Gellar et al., 2012). The results of audiotaped interviews focus on adolescents' views and suggestions of nursing interventions relating mainly on confidentiality issues. It was revealed that privacy must be maintained during intervention sessions to avoid stigma of being identified as obese. Furthermore, the sessions should be conducted in a private room and preferably students would like to meet nurses before school and not at the end of the class (Gellar et al., 2012).

6.1.1 Nutritional and Physical Educational Interventions

In the study conducted by Park et al., in South Korea, the need for improved knowledge of nutrition was evident among nurses. In addition, from all reviews concluded by researcher there was a deficient obesity-related nutritional knowledge (Park et al., 2011). Nurses in schools, or primary health care should always encourage overweight adolescents to consume more fruits and vegetables, less fat dairy and more protein based nutrients (Calderone, 2005). Also, scientist agrees that adolescents need to be educated to read the labels

and then choose lower-fat and low-sugar snack food. Moreover, an intervention should include engaging adolescents in regular physical activity which has become more challenging regarding the sedentary activities such as playing computer games or decreased physical education in schools (Calderone, 2005).

According to the Hawley et al., there are obesity prevention and management programs that designed to assist overweight adolescents towards reaching the increased physical activity, reducing passive sedentary behavior and eating a healthy food (Hawley et al., 2010). On the contrary, one researcher argues that obtaining information about physical behavior and nutrition does not necessarily mean to transfer into real actions. Consequently, in order to facilitate the change to enhance the chances that adolescents will take real actions towards goals both environmental and individual factors should be considered. Hawley conducted a pilot study with the aim of educating 6th graders including their parents' importance of daily exercise and healthy nutrition to motivate them reach the goals by Stages of Change theory (Hawley et al., 2010). After the courses, families reported they have perceived about healthy eating and readiness to change in the areas of exercise more significantly, than they had before. Hence, researcher highlights that boosting participants' sense of self-efficacy may play a key role in convincing and effective intervention in terms of nutrition and physical activity (Hawley et al., 2010).

Above all, when nurses encourage healthy eating behavior of obese students, they have to consider the cultural and social values and realize that food in some cultures is not just a part of biological need. For example, food in some cultures are consumed to celebrate the traditional holidays and show hospitality. Researcher deems that disregarding the cultural and social value of food may pose a threat to cultural and social values and to well-being (Have, 2014).

6.2 Advocacy and Counselling

According to the researchers, nurses should use special approaches such as motivational interviewing in order to assess clients' readiness to change, provide weight loss counseling and encourage them to become more physically active. The motivational interviewing should consist of non-judgmental questioning and reflective listening to analyze the adolescents' beliefs and values (Budd et al., 2015). A Swedish study conducted by Engström, reveals that ¼ of the participating nurses used motivational interviewing on a weekly basis as an approach when advocating clients with obesity or overweight (Engström et al., 2013). On the other hand, a great attention is directed towards the parents of the obese adolescents. Calderone, admits that nurses should provide recommendation both for parents and adolescents as to what they can do at home, or in their community to diminish the obesity and CVD risk factors (Calderone, 2005).

As follows, investigation conducted by Pbert et al., summarize that students receiving counseling interventions delivered by nurses are satisfied with the level of fidelity of the sessions. Students also declared that school nurses were very helpful in their learning of healthy nutrition and physical activity. Overall, the counseling and advocacy interventions produced a series of positive changes in adolescents self-reported obesogenic behaviors (Pbert et al., 2014).

6.3 Psychosocial Interventions

Frisco documented that typical psychosocial challenges associated with obesity in adolescents found in reviewing the literature are shame, stigma, low self-esteem and poor body image. Due to these factors, obesity is associated with depressive symptoms in younger adolescents. In addition to this, research done on obesity stigma declares that adolescents' depressive symptoms, which related to obesity, are often due to the poor interventions (Frisco et al., 2009).

The results from the Swedish study inform that most of the nurses felt that obesity was an important issue for developing health care service and thus did not support the idea of that a patients' weight is not really my business (Engström et al., 2013). On the other hand, Engström believes that a trusting relationship is crucial in nursing care and due to the nurses' negative views on obesity and poor perception of its importance might put the client-nurse relationship at risk and low effectiveness in interventions (Engström et al., 2013). Moreover a comprehensive review done by Budd et al., reports a bias perceptions and attitudes among health care givers such as nurses, dieticians and psychologists towards obese people. In order to improve this situation, researchers in the Ohio State University Medical Center developed the RESPECT Model, which is intended to stimulate and strengthen the compassionate care for all obese clients. According to Budd, when fully applied this model can foster respectful, professional relationships within an environment that is suited to optimum health care delivery (Budd et al., 2015). Reader will find the Respect Model in Appendix 2.

Have reports that among important values to consider during health promotion are freedom of choice, privacy and autonomy. It must be remembered that implementation of measures may have serious consequences for individual's self-image, self-esteem and general psychological well-being. Furthermore, such programs may contribute to stigmatization of obesity (Have, 2014). Thus, the debate here is to what extent can health care providers go on with promoting intervention methods for adolescents suffering from obesity? What is the balance between negative consequences of these promotions and improvement of health?

7 Discussion

It is a challenging task when it comes to treating obese adolescents. Literature supports the use of various nursing interventions for promoting healthy lifestyle for young individuals. Based on the results extracted from eleven articles, nurses should implement the interventions that consider the behavior modifications in nutrition and physical activities. Thus, one of the fundamental aspects in nursing interventions for obese adolescents is achievement of healthy lifestyle modifications, which eventually leads to long-term physical improvement. Furthermore, the evaluation and monitoring of obesity prevention and interventions in adolescents is important. Roseman et al., who accomplished a literature review on this matter, found out that few studies have actually evaluated the treatment outcomes (Roseman et al., 2011). In result, those intensive intervention strategies involving dietary and physical education, behavioral activities showed a promise in for instance, reduction of fat mass and BMI. However, these studies lacked theoretical frameworks, which is arguable whether the findings are consistent and trustworthy (Gellar et al., 2012).

Perhaps, one of the major barrier to nursing intervention implementation was adolescents association with stigma of being identified as obese. These concerns are feasible with literature, which supports the concept about how overweight youth is more likely to suffer from depression and being stigmatized, marginalized by society and teased by their peers (Strauss, 2003. Eisenberg, 2003. Tang-Peronard, 2008). Nurses should assess the mental well-being of obese adolescents, since it was linked to anxiety and depressive symptoms. Melnyk et al., also supports the fact that there is a strong association between obesity and psychological outcomes and this issue should be addressed thoroughly (Melnik et al., 2006). Therefore, nurses as care providers need to have a more individual and holistic approach to every suffering adolescent when implementing the interventions. An essential element during intervention period is nursing support, which requires advocating the youth and families about monitoring their progress (Washington R, 2008). For instance, families should be encouraged to plan regular exercises with the goal to make these activities fun and habitual (Daniels & Loggie, 1992).

Nurses, or generally health care providers are recognized as principal source of knowledge and health wisdom by many adolescents. Therefore, nurses have the “power”

within parents and youth in influencing unhealthy lifestyles such as decreased physical activity and increased fat intake. For this reason, adolescents will listen carefully to nurses' recommendations about healthy lifestyle behavior (Calderone, 2005). Sargent et al., reported that interventions delivered by nurses in health care stations to treat risk factors associated with obesity are found to be very effective by providing the counseling sessions (Sargent et al., 2012). Furthermore, a meta-analysis of randomized controlled trials on weight-loss management and the use of motivational interviewing showed the precise advantages on reducing weight (Armstrong et al., 2011).

Nursing interventions for obesity treatment very often provoke ethical questions and considerations. One of the eminent researchers, who studied ethics dealing with obesity intervention claims: "The potential ethical pitfalls that arise with the respect to the prevention of overweight regard consequences for physical health, psychosocial well-being, equality, social and cultural values, privacy and attribution of responsibilities" (Have, 2014). In fact, although health care personnel will try to take measures in prevention of obesity, the numbers of people who would develop obesity will be always maintained. Due to this, it is necessary to design specialized interceptive methods, which would consider feelings, and beliefs of overweight or obese persons. According to Have, one of the misconception in intervention that occurs is how a nurse targeting on helping obese people may unintentionally miss the information about weight and lifestyle habits to be very (Have, 2014). Typical ethical questions that may arise in caring for obese individuals are "To what extent can nurse go in advocacy when promoting healthy lifestyle?", "When exactly should nurses respect and accept personal lifestyle choices?" and so on. Noticeably, nurses should be aware of negative societal stigma when it comes to nurses counseling parents of obese adolescents, because parents and children may have already had strong feelings of guilt.

7.1 Findings in relation to the theoretical framework

Psychological theories of behavior modification have proved to be successful application in treatment of obesity. The concepts like goal- setting or self-efficacy strategies for

instance, arranges person's progress towards achieving goals such as decreasing the weight (Duffy & Spence, 1993, Cullen & Smith, 2001). Plentiful of advantages are obtained where parents, rather than children are given the primary responsibility for behavior change (Golan et al., 1994). Regarding the study of the beneficence of using theoretical model, there were improvements in physical and dietary behaviors; extended exercise duration and frequency, diminished fat intake in the diet and added fruit and vegetable consumption (Mastellos et al., 2014).

A literature review handled by Johnson also included application Transtheoretical model and stages of change for assessment of participants' stages of change and the interventions regarding obesity (Johnson, 2008). In the included studies, TTM SOC was practiced with physical and dietary modification as means of intervention. A trial evaluated the diet, stress and physical activity modifications based on theoretical framework and concluded that a more significant weight loss was observed in this group, rather than in control group (Johnson, 2008). The total amount of time taken for this change is reported to be 24 months (Johnson, 2008). A similar findings from another study demonstrate a significantly greater weight loss for those progressing to the "action stage" of SOC in comparison to those who remained in a "pre-action stage" (Jones, 2003). On the other hand, TTM based interventions allow nurses to take suffering group through the stages advancing them to a better healthy lifestyle. Moreover, this framework grants the assessment of the obese individual in their particular stage promoting the better individualized intervention methods.

8 Conclusion

This thesis focused on adolescent obesity as one of the world's` pacing health threats and therefore authors purpose through this study was to reveal the nurses role in promoting healthy lifestyle for adolescents suffering from obesity. Author chose Transtheoretical model as a theoretical framework of this study so that to integrate into the intervention programs in order to enhance the positive outcomes. Many researchers supported in their studies the use of TTM and called it as a promising model of behavior change. It can bring an improvement in dietary and physical activity behaviors when combined with other interventions (Mastellos et al., 2014). It is enormously important how developing and testing theory-based interventions can enlighten researchers about the clarification of processes used in the study. Vividly, as it was mentioned above, some studies did not show long-term sustainable results of interventions and due to this issue Summerbell and his colleagues conclude: "Perhaps outcomes will only be achieved through a multifactorial theoretical approach that considers the impact of system, environment and organizational issues as well as the need to consider and address individual and group behavior change" (Summerbell et al., 2005).

In conclusion, we nurses are the largest group of health care system in this world. We are the ones who inspire families, children, neighbors, co-workers and other people in communities to take an active part in reversing worlds' obesogenic trend throughout the sustainable and effective promotion of care strategies to achieve and maintain healthy lifestyles (Budd, 2015).

8.1 Strengths, Limitations and Recommendations

One of the pitfalls of this study is that it is comparatively a small study where only eleven articles are used to investigate the research question. The number of materials and the method itself did not allow author to find more and nursing interventions that could be applied in treatment of adolescence obesity. Also author in the beginning of the study discussed the criteria for northing health promotion but did not discuss in depth in regards to adolescence obesity later in the study. This is also due to the scarcity of data found from

literature review. Also, author focused on Transtheoretical intervention itself but did not comprehensively analyzed the outcomes of TTM- based intervention methods. Due to this, author highly recommends for the future researches to take into account ultimate outcomes of TTM based interventions. On the other hand, one of the main limitations of chosen eleven studies was the lack of Theoretical framework in interventions. Regarding this, only four studies out of eleven had stated their theoretical frameworks. The lack of theoretical framework does not allow the investigator to draw empirical explanations of phenomena during interventions.

Most of the investigated studies had qualitative content analysis as a research method. However, each study elaborated a reasonable number of other studies containing quantitative as well as other scientific methodology. Therefore, it is possible to generate significant findings and apply those to obese adolescents. Moreover, all studies had both female and male participants from diverse ethnical backgrounds allowing this review to be generalizable and credible. Overall, the data retrieved is highly reliable, since all the articles are peer-reviewed and scientific. There is only one study conducted in 2005 and the majority of studies are conducted in the latest years, which substantiates the validity in the current review. In addition, three studies had qualitative interviewing and questionnaire methods, thereby increasing the feasibility and acceptance of the results. The content of the articles were relevant in a way that ages of the participants ranged from about 10 to 20 years old corresponding to the group of “adolescents”. However, most studies were not ethnically diverse. A great part of researches have been conducted in United States of America. This, in turn questions an issue of possibility to generalize the finding to a broader context of population. Nevertheless, of those in which ethnicity was reported one included Hispanic, African American adolescents, two included Nordic countries and one was from Netherlands. Most studies included mixed samples of boys and girls, considering the gender issues. 2 studies out of 11 were clinic-based, 3 studies were school based and 3 studies were home based and the rest were held in community. Thus, evidence from this research can be used as a guide for public health care, clinical practice and future studies about this high risk population.

It is important to improve obesity management programs for adolescent either in primary care or in schools. Due to the obesity, becoming epidemic further education for nurses and all the health care personnel is needed. One of the main facts that need to be into such

education is nurses' professional attitudes and beliefs towards obese clients and their obesity-related intervention methods. Furthermore, more elaboration and development is needed on specifically obesity targeted adolescent activities that nurses accomplish. In the school settings, the main aspect nurse has to consider is that they have tremendous potential to identify, prevent and treat obesity in adolescents. Therefore, effective interventions for obese youth needs understandings of the requirements and concerns dealing with everyone who is suffering (Gellar et al., 2012).

9 References

- Allon, N (1982) The stigma of overweight in everyday life. *Psychological Aspects of obesity*, 130-174
- Armstrong, M et al., (2011) Motivational interviewing to improve weight loss in overweight and obese patients. *Obesity Reviews* 12 (9), 709-723
- Aston M, et al., (2012) More than meets the eye. Feminist post-structuralism as a lens towards understanding obesity. *J Adv Nurs*, 68 (5), 1187-1194
- Bandura, A. (1986) Social foundations of thought and action: A social cognitive theory
- Bogossian, F et al., (2012) A cross-sectional analysis of patterns of obesity in a cohort of working nurses and midwives in Australia, New Zealand and the UK. *International Journal of Nursing Studies*, 49 727-738
- Budd, G et al., (2015) “The obesity epidemic, part 2: Nursing assessment and intervention” 115 (1), 38-47
- Calderon, K et al., (2005) Obesity-related cardiovascular risk factors: Intervention recommendations to decrease adolescent obesity. *Journal of Pediatric Nursing*, 20, (1) 3-14
- Chater, Shirley (1976) “Operation update: The Search for Rhyme and Reason. *National League for nursing* p. 5-6
- Daniels, S & Loggie JM (1992) Hypertension in children and adolescents. Part 1: Nonpharmacologic control. *Physician & Sportsmedicine*, 20, 121-134
- Duffy, J & Spence SH (1993) The effectiveness of cognitive self-management as an adjunct to a behavioral intervention for childhood obesity. *Journal of Child Psychology and Psychiatry* 34, 1043-1050

- Elder, J et al., (2007) A description of the social-ecological framework used in the trial of activity for adolescent girls. *Health Education Research* 22, 155–165
- Elo and Kyngäs (2008) The qualitative content analysis process. *J Adv Nurs*, 62 (1) 107-115
- Engström. M et al., (2013) District nurses` self-reported clinical activities, beliefs about and attitudes towards obesity management. *Applied Nursing Research* 26, 198-203
- Epstein, L et al., (2001) Increasing fruit and vegetable intake and decreasing fat and sugar intake in families at risk for childhood obesity. *Obesity Research* 9, 171-178
- Ferraro, K (2003) The life course of severe obesity: Does childhood overweight matter? *Journals of Gerontology & Social Sciences* 58, 110–119
- Fogg L. & Gross D. (2000) Threats to validity in randomized clinical trials. *Research in Nursing & Health* 23, 79–87
- Frisco, M et al., (2009) Adolescent weight and depressive symptoms: for whom is weight a burden? *Social Science Quarterly* 90 (4), 1019-1037
- Gellar, Lauren et al., (2012) Exploratory Research to Design a School Nurse-Delivered Intervention to Treat Adolescent Overweight and Obesity. *Journal of Nutrition Education and Behavior* 44 (1) 46-55
- Guttman N, Salmon CT. Guilt (2004) Fear, stigma and knowledge gaps: ethical issues in public health communication interventions. *Bioethics* 18 (6), 531–52
- Hankey, C et al., (2004): “Eating habits, beliefs, attitudes and knowledge among health professionals regarding the links between obesity, nutrition and health”, *Public Health Nutrition*, vol 7 (2), 337-343

Have, ten Marieke (2014) Ethical aspects of obesity prevention. *Best Practice & Research Clinical Gastroenterology* 28, 303-314

Hawley, S et al., (2010) Development of an obesity prevention and management program for children and adolescents in a rural setting. *Journal of Community Health Nursing*, 23 (2), 69-80

Kautiainen, S (2005) Trends in adolescent overweight and obesity in the Nordic countries”, *Scandinavian Journal of Nutrition* 49, (1) 4-14

Kelly, S et al., (2008) Systematic review of Multicomponent interventions with overweight middle adolescents: implications for clinical practice and research. *Worldviews on Evidence-Based Nursing*, 5 (3), 113-135

Kozier et al., (2010) Fundamentals of Nursing. Concepts, processes and practice. 2nd edition pp. 4-50

Kroeze W, Werkman A, Brug J, (2006) A systematic review of randomized trials on the effectiveness of computer-tailored education on physical activity and dietary behaviors. *Ann Behav Med*, 31 (3) 205-223

Laska, M et al., (2012) Interventions for weight gain prevention during the transition to young adulthood: a review of the literature. *J Adolesc Health*, 50 (4), 324-333

Lee, J et al., (2015) Transtheoretical Model-based nursing intervention on lifestyle change: a review focused on intervention delivery methods. *Asian Nursing Research*, 9, 158-167

Lindsay, A et al., (2006) The role of parents in preventing childhood obesity. *Future of Children*, 16 169–186

Mastellos, N et al., (2014) Transtheoretical model stages of change for dietary and physical exercise modification in weight loss management for overweight and obese adults. *Cochrane Database of Systematic Reviews*, 2 (3), 1-48

Melnyk, B et al., (2006) Mental health correlates of healthy lifestyle attitudes, choices & behaviors in overweight teens. *Journal of Pediatric Health Care* 20, 401–406

McLean N., & Hardeman W (2003) Family involvement in weight control, weight maintenance and weight-loss interventions: A systematic review of randomized trials. *International Journal of Obesity & Related Metabolic Disorders*, 27, 987–1005

Needham, Belinda L., and Robert Crosnoe. (2005) Overweight Status and Depressive Symptoms During Adolescence. *Journal of Adolescent Health* 36, 48–55

Obarzanek, E et al., (2001) Long-term safety and efficacy of a cholesterol-lowering diet in children with elevated low-density lipoprotein cholesterol. *Pediatrics*, 107, 256-264

Ogden, CL et al.,(2008) High Body Mass index for age among US children and adolescents. *JAMA* 299, 2401-2405

Olshansky, S et al., (2005) A potential decline in life expectancy in the United States in the 21st century. *NEJM*, 252, 1138-1145

Pahkala K., Heinonen O et al., (2007) Leisure-time physical activity of 13-year-old adolescents. *Scandinavian Journal of Medicine & Science in Sports*, 17, 324–330

Park, K et al., (2011) Assessment of nurses' nutritional knowledge regarding therapeutic diet regimens. *Nurse Education Today*, 31, 192-197

Pbert, Lori et al., (2013): "A school nurse-delivered intervention for overweight and obese adolescents", *J Sch Health* 83 (3), 182-193

Polit, D and Beck, C (2008) Nursing research: generating and assessing evidence for nursing practice, Philadelphia: Lippincott Williams and Wilkins.

Prochaska JO, DiClemente (1984) Self change processes, self- efficacy and decisional

balance across five stages of smoking cessation. *Prog Clin Biol Res.* 156, 131-140

Prochaska, J., DiClemente, C., & Norcross, J. C. (1992) In search of how people change: Applications to addictive behaviors. *American Psychologist*, 47, 1102–1114

Puhl RM, Heuer CA (2009). The stigma of obesity: a review and update. *Obesity. Silver Spring*, 17 (5) 941-964

Roseman, MG et al., (2011) A content Analysis of kindergarten- 12th grade school-based nutrition intervention: taking advantages of past learning. *Journal of Nutrition Education and Behavior* 43, 2-18

Saelens, B et al., (2002) Behavioral weight control for overweight adolescents initiated in primary care. *Obesity Research*, 10, 22–32

Schlottfeldt, Rozella (1972) “This I believe...Nursing is health care”, *Nurs Outlook* (30) 245

Strauss R, Pollack HA, (2003) Social marginalization of overweight children. *Arch Pediatr Adolesc Med* 157, 746-752

Summerbell, C et al., (2005) Interventions for preventing obesity in children. *The Cochrane Database of Systematic Reviews*

Tang-Peronad, JL et al., (2008) Stigmatization of obese children and adolescents: the importance of gender. *Obese Rev* 9, 522-53

Tingen et al., (2009) The Importance of Nursing Research. *Journal of Nursing Education* 48 (3) 167-170

Washington, Reginald (2008) Overview of the expert committee's recommendations for prevention, diagnosis and treatment of child and adolescent obesity. *Progress in Pediatric Cardiology* 25, 125-128

Wei, J et al., (2003) National surveillance for type 2 diabetes mellitus in Taiwanese children. *JAMA* 290, 1345-1350

Whitlock, EA et al., (2008) Effectiveness of weight management programs in children and adolescents. *Evid Rep Technol*, 170, 1–308

Zametkin A.J., Zoon C.K., Klein H.W & Munson S. (2004) Psychiatric aspects of child and adolescent obesity: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry* 43, 134– 150

Websources

Ronald M. Krauss et al., (2000) AHA Scientific Statement AHA Dietary Guidelines, websource: <http://circ.ahajournals.org/content/102/18/2284.full>
(Accessed 2.12.2015)

Janice, M & Peggy, A (1996) Nursing Research, second edition, pp 1-7. Available on https://books.google.fi/books?hl=fi&lr=&id= 3h_Tqnp1-IC&oi=fnd&pg=PA1949&dq=inductive+literature+review+in+nursing+research&ots=V05wldvriU&sig=BZbF6ElQA7Ti0FlCMKmbOBndvE8&redir_esc=y#v=onepage&q=inductive%20literature%20review%20in%20nursing%20research&f=false (Accessed 17.11.2015)

Jääskeläinen, A (2013) Epidemiologic studies on overweight and obesity in adolescents. *Dissertation in Health Sciences*, (189), 1-90.). Available at http://epublications.uef.fi/pub/urn_isbn_978-952-61-1223-7/urn_isbn_978-952-61-1223-7.pdf (Accessed 16.11.2015)

National Heart Lung and Blood Institute Lifestyle Interventions to reduce cardiovascular risk: systematic evidence review from the Lifestyle Work Group
Available from: http://www.nhlbi.nih.gov/guidelines/cvd_adult/lifestyle/index.htm
(Accessed 01.12. 2015)

Finnish Advisory Board on Research Integrity (2012) Ethical principles. Available at <http://www.tenk.fi/en/responsible-conduct-research-guidelines> (Accessed 06.03.2016)

Powell et al., (2012) International literature review: ethical issues in undertaking research with children and young people. Available at http://epubs.scu.edu.au/cgi/viewcontent.cgi?article=1041&context=ccyp_pubs (Accessed 06.03.2016)

Appendices

Appendix 1. Presentation of summarized scientific articles used for the current literature review.

Author/Year	Title	Aim	Methods	Results	Country
1. Gellar, Lauren et al. 2012	Exploratory research to design a school nurse-delivered intervention to treat adolescent overweight and obesity	To evaluate the efficacy of a school nurse-delivered intervention	Audiotaped and transcribed verbatim	Teen issues included dealing with peer pressure, avoiding emotional eating. Focus on practical strategies	USA
2. Pbert, Lori et al. 2014	A school nurse-delivered intervention for overweight and obese adolescents	To evaluate feasibility and efficacy of school nurse delivered intervention	Nurse session counseling	Improved obesogenic behaviour, but not BMI	USA
3. Have, ten Marieke 2014	Ethical aspects of obesity prevention	To consider ethical issues in preventing obesity	Literature review	Considering ethical issues in programs delivered to obese population is extremely important	Netherlands
4. Calderon, Kristine 2005	Obesity-related cardiovascular risk factors: Intervention recommendations to decrease adolescent obesity	To review causes of adolescent obesity, the relationships of obesity to both hypertension and diabetes	Literature review	Epidemic of CVD increases by numbers of obese adolescents	USA

5. Budd, Geraldine 2015	The obesity epidemic, Part 2: Nursing assessment and intervention	To present theoretical framework to guide nursing assessment and intervention for obese clients	Literature review	Family-based behavioral changes fail to bring changes in child's BMI	USA
6. Park et al., 2011	Assessment of nurses' nutritional knowledge regarding therapeutic diet regimens		Structured questionnaires for 506 nurses	There is an urgent need to update the contents of nutrition education for nurses	South Korea
7. Hawley, Suzanne 2010	Development of an obesity prevention and management program for children and adolescents in rural setting	To deliver messages about the importance of eating healthfully	Survey of 113 adolescents and programs	No significant changes in students health attitudes and behaviors	USA
8. Washington Reginald, 2008	Overview of the expert committee's recommendations for prevention, diagnosis and treatment of child and adolescent obesity	To revise recommendation on childhood obesity from 15 professional organizations	Literature review	Recommendations include specific eating, physical activity and assessment of current and future medical risks	USA
9. Frisco, Michelle et al. 2009	Adolescent weight and depressive symptoms: for whom is weight a burden?	To find relationships between weight and depressive symptoms varying by sex and ethnicity	Multivariate analyses of Longitudinal study	No association between girls' weight and depressive symptoms, but there is among boys. Depressive symptoms associated with Hispanic	USA

				boys	
10. Engström, Maria 2013	District nurses' self-reported clinical activities, beliefs about and attitudes towards obesity management	To describe district nurses' self-reported clinical activities, beliefs about and attitudes towards obesity management and examine associations between variables	Questionnaire data	Most common activities performed were advice about physical activity(40,1 per cent) and general lifestyle advice(34,8 per cent)	Sweden
11. Mastellos et al., 2014	Transtheoretical model stages of change for dietary and physical exercise modification in weight loss management for overweight and obese adults	To assess effectiveness of dietary intervention or physical activity interventions based on transtheoretical model stages of change	Systematic literature review		UK

Appendix 2. Respect Model emphasizes the important aspects of sensitive care for obese patients.

R	rapport grounded in courteous and considerate communication and behavior
E	environments that can be used effectively, safely and comfortably
S	safety of patients and staff
P	privacy of patients, in keeping with an overall consideration of patient dignity
E	encouragement of patients to set realistic goals
C	caring and compassion, as opposed to victim-blaming behavior
T	tact in dealing with all patients, family members and other professionals